



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,679	12/04/2001	Charles Scott Nelson	DEP-0262	7642

7590 05/21/2003

VINCENT A. CICHOSZ  
DELPHI TECHNOLOGIES, INC.  
Legal Staff, Mail Code: 480-414-420  
P.O. Box 5052  
Troy, MI 48007-5052

EXAMINER

PHAN, THIEM D

ART UNIT

PAPER NUMBER

3729

DATE MAILED: 05/21/2003

2

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/004,679

Applicant(s)

NELSON ET AL.

Examiner

Tim Phan

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Chapel, Jr. et al (US 4,907,341) hereinafter '341.

**As applied to claim 1**, the '341 teaches a method of manufacturing a compound thin film resistor, comprising:

- disposing an amount of material having a TCR of between +500 to +9000 ppm (Cf. Fig. 2, element 42; column 4, lines 59-63) and a resistivity of 0.1 ohm per square (Cf. column 6, lines 29-30) or 7 micro-ohm-cm (for Nickel) on the substrate (Cf. Fig. 2, element 12),
- measuring (Cf. column 6, lines 11-14) the resistance value of the compound and laser machining for adjustment which is carried out under the guidance of a computer.

**As applied to claim 2**, the '341 teaches a thin film resistor which is deposited on the substrate (Cf. column 3, lines 66-68).

**As applied to claim 4**, the '341 teaches that the first setting of resistive material (Cf. Fig. 2, element 42; column 4, lines 3 & 4) is deposited on the substrate and the second setting of resistance material (Cf. Fig. 2, element 4; column 4, lines 4 & 5) is deposited on the first one.

**As applied to claims 9 and 10**, the '341 teaches that the substrate is glass or alumina from ceramic material (Cf. column 3, lines 40-42)

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 5-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the '341.

**As applied to claim 3**, the '341 teaches the claimed invention except for reading the resistor value within 0.2% of resistance value.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to obtain such accuracy since it was known in the art that the measurement is carried

out under the guidance of a computer (Cf. column 6, lines 11-13) and this means of measurement will give the accuracy which is recited.

**As applied to claims 5-7,** the '341 teaches the claimed invention except for measured or monitored firing or heat-drying of the thin film resistor between the two settings. The '341 teaches that it is known to adjust and deposit the second resistive material on the first one (Cf. 4, lines 4-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to fire or heat-dry the first deposit of resistive material so that the second resistive material can be adjusted before its deposition.

**As applied to claim 8,** the '341 teaches the claimed invention except for the deposition of resistive material from one of Platinum, Rhodium, Titanium, Palladium or their alloys.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select these materials or their alloys since it is known in this art that a selected, deposited material, e.g. Nickel, has a resistivity of 7 micro-ohm-cm.

**As applied to claim 11,** the '341 teaches the claimed invention except for the temperature firing between 1,000 to 1,600 degree Celsius.

The temperatures used to fire the temperature sensor are held to be within the ordinary skill of the artisan and would have been chosen without undue experimentation. Hence Claim 11

Art Unit: 3729

is obvious in view of the '341. Alternatively there is no criticality to the limitation recited in this claim.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tim Phan whose telephone number is 703-605-0707. The examiner can normally be reached on Monday - Friday, 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter VO can be reached on 703-308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

TP

Tim Phan  
Examiner  
Art Unit 3729

tp  
May 15, 2003

CJA  
CARL J. ARBES  
PRIMARY EXAMINER